REMARKS

This Reply is in response to the Office Action mailed on October 8, 2008 (Office Action). A Petition for One-Month Extension of Time (with fee) is filed concurrently. Hence this Reply is timely. In addition, the fee for filing an RCE is submitted. Accordingly, it is submitted that the requirements for proceeding as an RCE have been met.

Claims 1, 4, 5, 12, 19-22, 24-29, 33, 35-40 and 49-63 are now pending, with Claims 22, 24-29, 33 and 35-40 having been withdrawn from consideration. Claim 1 is the only independent claim which is pending and not withdrawn from consideration.

Applicants wish to thank the Examiner for the thorough search and for the thorough review and analysis of the application, claims, and the prior art.

Support for the newly presented claims may be found, *inter alia*, at page 7, line 14 "....one containing 10 to 20% oxygen". Accordingly, no new matter is added.

Response to Rejections

The rejection is respectfully traversed. The citation of a new document, 2003/0170466, Stachowiak, is noted. Since the rejection is based solely on "obviousness", 35 U.S.C. § 103, it is beneficial to understand this document before addressing the issue of "combining" this document with any other document.

This document describes producing a low-E multilayer coating having an Ag-based infrared reflective material as functional material, deposited on a glass substrate by sputtering.

According to Stachowiak, a dielectric layer of TiO_2 is then deposited on the protective NiCrOx layer. However, this TiO_2 layer is not a protective layer dedicated to the Ag-based layer. Rather, this is a dielectric layer which plays an important role in the interference effect to increase visible transmission and/or reduce visible reflection, and to obtain the desired color.

This effect depends on the refractive index of the dielectric material, i.e., TiO_2, and on the thickness of the dielectric layer, e.g., on the optical path of the dielectric layer which is the combination of the refractive index with the physical thickness. This is discussed in the paragraphs 0044 and 0045 cited by the Examiner, and in particular in lines 4-9 of paragraph 0045, page 3.

The TiO_2 material has a relatively high refractive index (n = 2.4 to 2.65) compared to classical dielectric materials such as SnO_2, Si_3N_4 and SiO_2. This is helpful to adjust the desired interference effect. However, the value of the refractive index is not sufficient to obtain an interference effect, the thickness of the layer is also important. Indeed, if the thickness is too low, the effect will be negligible.

This is the reason why, in the examples given by Stachowiak, the thickness of the TiO_2 layer on $NiCrO_x$ is relatively high, and in all the cases higher than 7 nm. This thickness is 61.5 nm or 23.0 nm according to the "First Table" of the example of Figure 2, page 3. In the example of Figure 3, the thickness of the TiO_2 layer on the $NiCrO_x$ layer is 49.6 nm (see "First Table" page 4). This is true also with the other examples. None of the numerous examples given by Stachowiak gives a value lower than 12 nm for the TiO_2 layer deposited on the $NiCrO_x$ protective layer.

Moreover, Stachowiak is silent about the atmosphere during deposition of TiO_2 layer as well as during deposition of the $NiCrO_x$ layer. However, this is a TiO_2 layer and not a TiOx layer. Therefore this TiO_2 layer must be fully oxidized to be transparent in order to have a high visible transmission according to Stachowiak (see Title of Invention: "*with high visible transmission*" and lines 5-6, paragraph 0045, page 3, "*increased visible transmission*"). So, Stakowiak does not look to the deposition of its TiO_2 layer in an atmosphere with reduced

amount of oxygen. Rather, such an atmosphere is contrary to the goal and thus contrary to the teachings of this document. For this reason, as will be addressed below*. That is to say that he does not look after a document such as Lingle.

It is true that Stachowiak gives very wide thickness ranges of 1-50 nm (10-500 Å), for the top portion, or 1-90 nm (10-900 Å), for the middle portion, in paragraph 0045. These are very wide theoretical ranges of thickness which ensure enclosing everything; however in practice no example is given with very low thickness. In other words, the low thickness is not enabled by the teachings of this document.

All of this may be distinguished from the second protective layer according to the instant invention which is not intended for playing a role in the interference effect, rather, this interference effect is the purpose of the "second transparent dielectric layer".

Contrary to the broad, non-enabled ranges in the Stachowiak document, the present invention addresses that a small thickness of 7 nm at maximum of a material having the specified electronegativity value deposited in an atmosphere containing 50% oxygen at maximum onto a first protective layer, as specified in the claims, deposited itself in an atmosphere containing 20% oxygen at maximum, has an advantageous unexpected effect on the protection of the Ag layer without affecting the global interference effect of the dielectric layers and so without affecting the color and the luminous transmission/reflection. Thus, the present invention is actually contrary to any enabling disclosure in the Stachowiak document.

The oxygen content of the atmosphere during deposition of both protective layers is important, as well as the electronegativity values required for the material deposited, because both protective layers have a specific role to play with respect to oxygen in order to protect the Ag layer, while being themselves transparent in the final product. Further, Stachowiak does

not describe nor suggest deposition of a second thin layer of protective material for the Ag layer in the specific condition as set forth in the instant claims.

The next question is why a person of ordinary skill, having the Stachowiak document, would even consider the Lingle document, U.S. Patent No. 6,445,504. The Lingle document teaches using a thin TiOx layer under the Ag layer: this is different from the claimed invention. Lingle does **not** describe **nor** suggest depositing a second protective layer above the Ag layer, According to Lingle, a thin NiCrOx protective layer is deposited on the Ag layer. On this protective layer is deposited a thick dielectric layer which play a role in the interference effect to adjust visible transmission/reflection, and to obtain the desired color. There is no second thin protective layer on the Ag layer. The teaching of Lingle lies in the deposit of a thin layer of TiOx directly under the Ag layer.

Applying the teaching of Lingle to Stachowiak would lead to insert a thin layer of TiOx under the Ag layer. This does not render the claimed invention obvious.

Claim 1 is the only independent claim. Since this claim is not obvious, the dependent claims are similarly not obvious.

With respect to the newly presented claims, it is further pointed out that a deposit atmosphere corresponding to those claims, for the TiO2 layer (onto the NiCrOx layer), is not described nor suggested in Stachowiak. Instead, Stachowiak suggests a fully oxidized TiO2 layer so as to obtain a "*high visible transmission*". There is no reason that the person of ordinary skill in the art looks towards a teaching relating to depositing a second protective layer in a relatively neutral atmosphere or in an atmosphere containing a limited portion of oxygen after consideration of this Stachowiak document. Moreover, the TiOx sub-oxide layer of Lingle is directed towards another function and is deposited under the Ag layer, and the layer deposited

onto the NiCrOx is a thick dielectric layer and not a protective one. So, there is no reason so that the skilled man looks towards the Lingle patent as to the newly presented claims. Even if one of skill did look towards the Lingle patent, that patent does not disclose nor suggest depositing a layer onto the NiCrOx layer in an atmosphere containing 20% oxygen at maximum. According to Table III cited by the Examiner, the thick layer SnOx deposited onto the NiCrOx layer, is deposited in an atmosphere 50% oxygen (40 sccm argon and 40 sccm oxygen).

CONCLUSION

Based on the foregoing, reconsideration, withdrawal of all rejections, and allowance are respectfully solicited. Should the Examiner be of the opinion that a telephone conference would expedite the prosecution of this application, the Examiner is encouraged to contact Applicants' attorney at the telephone number given below.

Respectfully submitted,

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